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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,603	11/09/2001	Stefan Miersch	MSN-32778	9226

22202 7590 02/25/2010

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EXAMINER	
DUONG, THANH P	

ART UNIT	PAPER NUMBER
1797	

NOTIFICATION DATE	DELIVERY MODE
02/25/2010	ELECTRONIC

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEFAN MIERSCH and PETER-JURGEN KRUGER

Appeal 2009-004614
Application 10/008,603
Technology Center 1700

Decided: February 23, 2010

Before BRADLEY R. GARRIS, TERRY J. OWENS, and
MARK NAGUMO, *Administrative Patent Judges.*

Opinion for the Board filed by *Administrative Patent Judge* OWENS.

Opinion Concurring filed by *Administrative Patent Judge* NAGUMO.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 7-12. Claims 1-6 stand withdrawn from consideration by the Examiner. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a system for generating and collecting methane gas. Claim 7 is illustrative:

7. A system for generating methane gas which comprises:

a flexible bag having an open end for mounting to a bag filling machine for filling and compacting the bag with non flowable material, said bag having a horizontally extended tubular length, a majority of said length filled with substantially non-flowable biomass material in a composition known to produce methane gas and as desired adding an inoculant to the material that induce a reaction with the biomass material to include methane gas emission from the biomass material;

a remaining tubular length of the bag as removed from said machine being unfilled with the material, said open end tied off and filled with said gas emitted by the biomass material, a pipe inserted through the bag wall where filled with said gas for releasing methane gas from the remaining tubular length and a continuation of said pipe directing said gas to a gas collection site.

The References

Coulthard	3,981,803	Sep. 21, 1976
Chow	4,157,958	Jun. 12, 1979
Pogoda	4,267,147	May 12, 1981
Bremmer	4,579,654	Apr. 1, 1986
Garvin	5,461,843	Oct. 31, 1995

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 7, 8, 11 and 12 over Garvin in view of Bremmer and Chow; claim 9 over Garvin in view of Bremmer, Chow and Coulthard; and claim 10 over Garvin in view of Bremmer, Chow, Coulthard and Pogoda.

OPINION

We reverse the Examiner's rejections.

Issue

Have the Appellants shown reversible error in the Examiner's determination that it would have been prima facie obvious to one of ordinary skill in the art, in view of Chow, to insert a pipe into Garvin's bag to collect and store methane gas emitted from compost?

Findings of Fact

Garvin discloses an apparatus for silage fermentation, stored grain preservation, or garbage decomposition (col. 1, ll. 40-45). Garvin stores, in a large plastic bag (10), organic material to be treated, places a perforated conduit (14) into one end of the bag and lengthwise through the interior of the bag, forces treatment media such as air through the perforated conduit, and vents the treatment media through a single vent (34) at the opposite end of the bag (col. 1, l. 67 – col. 2, l. 1; col. 2, ll. 7-10, 28-30; col. 3, ll. 7-19; col. 4, ll. 20-26; Fig. 1). "If the material is garbage that is to be composted, it must be provided, e.g., with oxygen as well as moisture to maintain the decaying process" (col. 3, ll. 15-17).

Chow discloses an apparatus for the manufacture of combustible gas, principally methane, from organic waste such as grass clippings, leaves and sewage sludge (col. 1, ll. 7-12). Chow's apparatus includes a horizontally oriented cylindrical vessel that has closed ends and an open bottom (26) and is submerged and secured in a body of water (col. 2, ll. 42-45; Figs. 1, 2). The organic waste is fed into the vessel through an inlet (18) at the top of the vessel and drops into the body of water within the vessel (col. 2, ll. 60-62; col. 3, ll. 13-16; Fig. 2). The organic waste is agitated by a jet of water fed

into a perforated pipe (22) which extends horizontally through the organic waste (col. 3, ll. 16-21; Fig. 2). The combustible gas, principally methane with minor amounts of carbon monoxide, carbon dioxide and hydrogen, is collected in the upper portion (19) of the vessel and is removed to a storage tank (15) (col. 3, ll. 1-8; Fig. 2). The digested organic waste is continuously swept out of the open vessel bottom by moving water (col. 2, ll. 60-67; col. 3, ll. 22-23). "The process takes about three days" (col. 2, ll. 67-68).

Analysis

The Examiner argues that it would have been prima facie obvious to one of ordinary skill in the art to modify Garvin's apparatus with "a pipe inserted into the bag and/or vessel as taught by Chow in order to collect and store emitted gas from biomass material (compost)" (Ans. 5).

The Appellants argue that one of ordinary skill in the art would not have modified Garvin as proposed by the Examiner because "the proposed combination of references would render the modified disclosure of Garvin et al. unsuitable for the purpose of Garvin et al. Specifically, air would no longer be forced through the biomass and into the atmosphere to remove gases emitted from the biomass (water vapor and/or decomposition products)" (Br. 12-13). The Appellants argue that "methane generation from compost is an anaerobic process that must occur in the absence of oxygen" (Br. 11).

The Examiner argues (Ans. 8):

> [T]he introduction of oxygen does not hinder the production of the methane gas. Although, the anaerobic "process" as claimed generates methane gas but it is known in the art that the aerobic "process" also generates methane gas but at a much less valuable source of energy than then [sic] methane gas generates from [the] anaerobic process (See USPN 5,269,634).

US 5,269,634[1] discloses that "[i]n areas [of a landfill] where oxygen is present, the decomposition will be aerobic and in areas where little oxygen is present, such as at the deeper depths, decomposition will be slower and anaerobic, producing methane-containing gas" (col. 1, ll. 21-25). That disclosure indicates that methane is contained in gas produced from decomposition under anaerobic conditions where little oxygen is present, but does not indicate that methane is contained in gas produced from decomposition under an aerobic condition such as in Garvin's bag where air is blown through the bag (col. 2, ll. 28-30; col. 4, ll. 20-26).

The Examiner argues that methane gas emission from biomass material is a process limitation, and that the apparatus obtained by combining Garvin and Chow would be capable of producing methane (Ans. 7-9).

To arrive at such an apparatus one of ordinary skill in the art must have been led, through no more than ordinary creativity, to combine Garvin and Chow as proposed by the Examiner. *See KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (In making an obviousness determination one "can take account of the inferences and creative steps that a person of ordinary skill in the art would employ"). The Examiner has not established that one of ordinary skill in the art would have been led by Chow, through no more than ordinary creativity, to modify Garvin's apparatus, which is structured for blowing air through a bag and venting the air out of the bag, such that the apparatus is capable of generating and collecting a methane-containing gas.

Conclusion of Law

[1] US 5,269,634 to Chynoweth et al. issued December 14, 1993.

The Appellants have shown reversible error in the Examiner's determination that it would have been prima facie obvious to one of ordinary skill in the art, in view of Chow, to insert a pipe into Garvin's bag to collect and store methane gas emitted from compost.[2]

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 7, 8, 11 and 12 over Garvin in view of Bremmer and Chow, claim 9 over Garvin in view of Bremmer, Chow and Coulthard, and claim 10 over Garvin in view of Bremmer, Chow, Coulthard and Pogoda are reversed.

It is ordered that the Examiner's decision is reversed.

REVERSED

[2] The Examiner does not rely upon Bremmer, Coulthard or Pogoda for any disclosure that remedies the above-discussed deficiency in Garvin and Chow (Ans. 4-7).

NAGUMO, *Administrative Patent Judge*, concurring.

I agree that the Examiner's rejection must be reversed, but I reach that determination because in my view, on the record before us, the Examiner erred in construing the claims as covering an apparatus, rather than a process of using an apparatus.

The Examiner forthrightly states that "[t]he system is being examined as an apparatus" (Final Rejection 2; Ans. 4) and commendably proceeds to identify specific structures in the apparatus described by Garvin and the other references that the Examiner finds correspond to structures required by the claims. (*Id.*) The Examiner rejects Appellants' argument that the principles of operation of the apparatus described by Garvin would be altered, on the basis that the structures of Garvin's apparatus are not incompatible with the generation of methane gas. (Ans. 7-8.)

The term "system" (limiting our consideration to incontrovertibly patentable subject matter, such as that claimed in this appeal) can be applied to "things" ranging from objects (compositions of matter, manufactures, machines) to processes for manipulating objects, including processes of using machines. Although Appellants do not in so many words challenge the Examiner's premise that the claims define an apparatus, their arguments read as though what is being claimed is a process of using the apparatus recited in the claims to generate methane gas and to direct the gas to a collection site. Such a reading is broad, consistent with the claim language, and consistent with the supporting disclosure.

When so read, the differences between the processes of using the apparatus described by Garvin, which do not generate methane, and the

claimed process of generating methane, are far from trivial. The Examiner has not come forward with an adequate rationale, in my view, explaining why it would have been obvious to combine features of the process and apparatus for accomplishing the aerobic decomposition process described by Garvin with the process and apparatus for accomplishing the anaerobic decomposition process described by Chow.

Read strictly as an apparatus, however, I do not join the majority in finding that there would have been no reason to add a pipe to collect gas and direct it to another site, to the bag of the apparatus taught by Garvin. In my view, Appellants have not shown that the structures obvious in view of the applied references (as opposed to the intended use of those structures) are incompatible with the production of methane from biomass.

I respectfully concur in the judgment.

ssl

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